

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	312	546/4.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
L2	128	257/136.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
L3	1	257/136.ccls. and ruthenium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
L4	34	l1 and ruthenium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
S1	68	136/263.ccls. and absorbance	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/10 18:53
S2	216	136/263.ccls. and ruthenium	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 20:33
S3	53	136/263.ccls. and (ruthenium near dye)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 20:40
S4	3	136/263.ccls. and tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 20:41
S5	3	136/263.ccls. and (tris near tetrabutylammonium)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:41
S6	70	136/263.ccls. and (tetrabutylammonium)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/11 11:03
S7	87	wariishi.in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:48
S8	294	"4927721" "4684537" "5084365" "5350644" "5463057" "5525440"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:50
S9	235	("4927721" "4684537" "5084365" "5350644" "5463057" "5525440") and ruthenium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:50
S10	196	S9 and (solar photovoltaic)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:51
S11	0	S10 and tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:52

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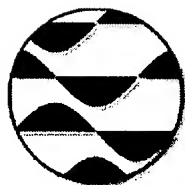
S12	15	tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:41
S13	2	"Ruthenium 620-1H3TBA"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:10
S14	0	Solaronix.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:58
S15	15	tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 20:59
S16	7944	(tris-tetrabutylammonium (black near dye))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 20:59
S17	7	136/263.ccls. and (black near dye)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 21:02
S18	1	"5885368".PN.	USPAT; USOCR	OR	OFF	2007/06/07 21:01
S19	9	136/263.ccls. and ((black orange red green blue) near dye)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 21:03
S20	2	136/263.ccls. and ((black and orange and red and green and blue) near dye)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 21:03
S21	86	(fukui-atsushi han-liyuan).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 21:07
S22	68	136/263.ccls. and absorbance	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 09:21
S23	15	136/263.ccls. and TBA	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 09:15
S27	3232574	tris(isothiocyanato)-ruthenium(II)-2,2':6',2"-terp- yridine-4,4', 4"-tricarboxylic acid, tris-tetrabutylammonium salt	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:10

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S28	0	"tris(isothiocyanato)-ruthenium(II)-2,2':6',2"-terp- yridine-4,4', 4"-tricarboxylic acid, tris-tetrabutylammonium salt"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:16
S30	9503	ruthenium and dye	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:45
S31	885	S30 and (solar photovoltaic)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:48
S32	30	S31 and TBA	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 11:00
S33	6	("4927721" "4684537" "5084365" "5350644" "5463057" "5525440").pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 11:18
S37	2648	(ITO "indium-tin oxide") same epoxy	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 19:01
S44	1	"5650019".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 19:44
S48	1	"20020036298".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/09 21:07
S49	1	136/263.ccls. and (absorbance near semiconductor)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/09 21:09
S50	1	136/263.ccls. and (absorbance near semiconductor)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/09 21:09
S51	29	136/263.ccls. and chromophore	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 18:57
S52	15	136/263.ccls. and ruthenium and TBA	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 19:29
S53	214	dye with (wavelength near shift)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 19:34
S54	26	S53 and (solar photovoltaic)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:25
S55	1	((Ruthenium Ru) near ("535" 535-bisTBA "620")) with ((heat light chemical) near treatment)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:50

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S56	1	(ruthenium near dye) with ((heat light chemical) near treatment)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:28
S57	86	136/263.ccls. and ((heat light chemical) near treatment)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:28
S58	44	((Ruthenium Ru) near ("535" 535-bisTBA "620"))	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:57
S59	269320	Ruthenium "620"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:57
S60	10	"Ruthenium 620" "Ru 620"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/11 10:25
S62	46399	photodiode	USPAT; USOCR	OR	ON	2007/06/11 10:26
S68	80	136/263.ccls. and ((absorbance absorption) near (peak maximum))	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/11 11:54
S70	4	("5885368" "20020040728" WO2004025748).pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:51
S72	264	andriessen.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:51
S73	24	andriessen.in. and (ruthenium Ru)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:52
S74	4	andriessen.in. and "Ruthenium 620"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:53
S75	63	andriessen.in.	EPO	OR	ON	2007/06/11 14:53



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Ruthenium 620-1H3TBA

Oxide Semiconductor Sensitizer

Ruthenium 470
Ruthenium 505
Ruthenium 520 - DN
Ruthenium 535
Ruthenium 535 - bisTBA
Ruthenium 620 -1H3TBA

Pricing in Swiss Francs (CHF)

Product designation:**Ruthenium 620-1H3TBA**

This product is identical to the old Ruthenium 620 or N-749, also known as "Black-Dye"

Chemical Name:

tris(isothiocyanato)-ruthenium(II)-2,2':6',2''-terpyridine-4,4',4''-tricarboxylic acid, tris-terabutylammonium salt

Short Formula: $[\text{RuL}(\text{NCS})_3] : 3\text{TBA}$

L = 2,2'-bipyridyl-4,4'-dicarboxylic acid

TBA = tetrabutylammonium

Molecular Weight: $\text{C}_{69}\text{H}_{117}\text{O}_6\text{N}_9\text{S}_3\text{Ru}$

1364.7 g/mol

CAS Number

N/A

Aspect:

Black to dark greenish powde

Properties:

Ruthenium 620-1H3TBA sensitizes efficiently wide band-gap oxide semiconductors, like titanium oxide, up to a wavelength of 920 nm.

spectrum in ethanol

Caution: Substance not fully tested

MSDS

[Technology]

[1 Operating principles of the Dye Solar Cells](#)[2 Operation of the Electrochromic Elements](#)[3 Publications](#)[4 Links](#)

Solaronix SA

Rue de l'Ouriette 129

CH-1170 Aubonne / Switzerland

Tel. +41 21 821 22 80

Fax +41 21 821 22 89

Quantity	Price net in CHF
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100 mg	540.00
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500 mg	2'430.00
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1000 mg	4'350.00
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2000 mg	7'650.00
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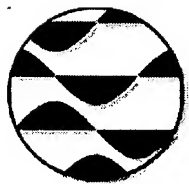
5000 mg	17'550.00
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Shipping costs to be added

Delivery time: three weeks after reception of purchase order, if not in stock

Please consult us for larger quantity quotations, or repetitive orders of **Ruthenium 535-bisTBA** sensitizer

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SOLARONIX

Material Safety Data Sheet (MSDS)

according to E.U. Directives 91/155/EWG

Revision: 01.02.2000

Index:

Product Name: **Ruthenium 620-1HTBA**

1. Identification and Company Name

1.1. Product Name: **Ruthenium 620-1H3TBA**

1.2. Address / Phone No: Solaronix SA
Rue de l'Ouriette 129
CH-1170 Aubonne /Switzerland
Tel +41 21 821 22 80
Fax + 41 21 821 22 89
e-mail : toby@solaronix.com
internet : <http://www.solaronix.com>

1.3. Emergency Phone No: +41 01 251 51 51
Swiss Toxicological Information Center

2. Product Description

Chemical characterization
of composition: Polypyridyl ruthenium(II) complex

Contains: tris(isothiocyanato) ruthenium(II)-2,2':6',2''-tertpyridine-4,4',4''tricarboxylic acid, tetrabutylammonium as counter ions

Content: 99 % vol.

CAS Reg. No: [N/A]

EU-Label: S 22-24/25

3. Summary Irritant.
Experimental substance, not fully tested.

4. First Aid Measures

4.1. Eye Contact: Rinse with plenty of water. Obtain medical attention.

4.2. Skin Contact: Remove contaminated clothing. Wash skin with water.

4.3. Inhalation:

4.4. Ingestion: Unlikely to be hazardous when swallowed.

4.5.	Symptomes:	-
5.	Fire and Explosion	
5.1.	Extinguishing Media:	Water
	unsuited:	Not known
5.2.	Special Indications in Case of Fire:	Not known
6.	Spillage / Accidental Release	
6.1.	After Spillage / Leakage:	Large quantities: wash-up spillage area with water Small quantities: wash-up spillage area with water
6.2.	Cleaning of Equipment:	Clean with water
7.	Handling and Storage	
7.1.	Handling:	Avoid contact with skin and eyes Avoid breathing dust
7.2.	Storage:	At room temperature
8.	Personal Protection	
8.1.	Working Hygiene:	-
8.2.	Personal Equipment:	Gloves: Yes Eye Protection: Yes Body Protection: None Respirators: None
9.	Physical and Chemical Data	
9.1.	Form:	Solid
9.2.	Aspect:	Dark green powder
9.3.	Odor:	None
9.4.	Phase Change:	Decomposed at ~ 250 °C
9.5.	Flash Point °C:	Not applicable
9.6.	Ignition Temperature °C:	Not applicable
9.7.	Explosion Hazard:	Not applicable
9.8.	Density Kg/dm ³ :	Not available
9.9.	Vapor Pressure:	Not applicable

- | | | |
|-------|--|------------------------------|
| 9.10. | Viscosity: | Not applicable |
| 9.11. | pH Value: | Not applicable |
| 9.12. | Solubility in Water: | Completely soluble at pH > 9 |
| 9.13. | Separation Coefficient
n-Octanol / Water: | Not available |

10. Stability and Reactivity

- | | | |
|-------|--------------------------------------|---------------|
| 10.1. | Conditions to Avoid: | None known |
| 10.2. | Incompatible Materials: | None Known |
| | Hazardous Decomposition
Products: | Not available |
| | Hazardous Reactions: | None known |

- | | | | |
|-----|---------------------------|------------------|---------------|
| 11. | Toxicological Data | LD50 Acute Oral: | Not available |
| | | Skin Irritation: | Weak |
| | | Eye Irritation: | Irritating |

12. Environmental Data Components Data:

Fish Toxicity LC50: Not available

Effect on Effluent Treatment

WGK : 0 (self classification)

13. Waste Disposal

Disposal should be in accordance with
local, state or national legislation.

Neutralization: dilute with water

Disposal of Empty Containers: wash with alkaline water

14. Transport

Regulations	Class UN No.
ADR/RID :	Not restricted
ICAO/IATA-DGR :	Not restricted
IMDG-Code :	Not restricted

Further Informations: Not classified as hazardous for transport

15. Regulatory Information

Indication According to
EU-Rules:

S22	Do not breath dust
S24	Avoid contact with skin
S25	Avoid contact with eyes

16. Other Informations

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